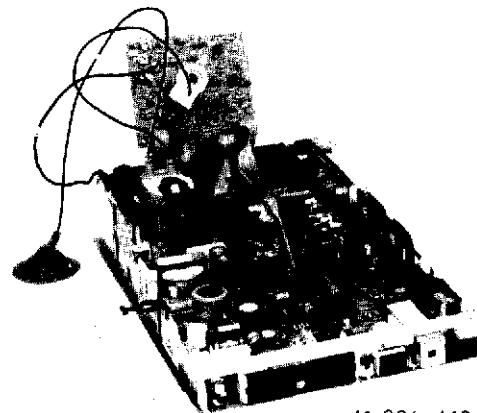


Service

Service

Service



41 884 A12

Service Manual

TECHNICAL DATA

Mains voltage	: 220-240 V ~ (± 10%)
Aerial input impedance	: 75 Ω - coax
Minimum aerial input VHF	: 30 µV
Minimum aerial input UHF	: 40 µV
Maximum aerial input	: 100 mV

Pull-in range colour sync	: +300 Hz/-300 Hz
Pull-in range horizontal sync	: +600 Hz/-600 Hz
Pull-in range vertical sync	: +5 Hz/-5 Hz

CONTENTS

	Page		Page
Technical data	1	Diagram mute panel	9
Warnings	2	Print lay out picture tube panel	9
Remarks	2	Print lay out mute panel	9
Mechanical instructions	3	Print lay out carrier panel	9, 10
Electrical instructions	3	Diagram teletext decoder	9, 10
Survey of panels	3	Print lay out teletext decoder	11
Partslist carrier panel	4	Partslist teletext decoder	12
Partslist picture tube panel	4	Faultfinding tree E,F	13, 14
Partslist mute panel	4	Bus faults teletext decoder	15
Wiring diagram	5	Fault diagnosis control system	15
Diagram A	6	SECAM/PAL transcoder	16
Diagram B	7	Symbols used in faultfinding tree	17
Diagram C	8	Symbols used in diagrams	18

Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified be used.

Documentation Technique Service Dokumentation Documentazione di Servizio Huolite-Ohje Manual de Servicio Manual de Servicio

Subject to modification

GB 4822 727 15947

Printed in The Netherlands

Copyright reserved

Published by
Service Consumer Electronics

CS 8 414 GB

WARNINGS

1. Safety regulations demand that the set be restored to its original condition and that components identical to the original types be used. Safety components are marked by the symbol **A**.
2. In order to preclude damage to ICs and transistors flashover of the EHT should be avoided. To prevent damage to the picture tube, the method indicated in fig. 1 should be followed in case of discharge. Make use of a high-tension probe and a universal meter (mode DC-V). Discharge until the meter reads 0 Volts (after approx 30 s).

3. ESD



All ICs and many other semi-conductors are susceptible to electrostatic discharges (ESD). Careless handling during repair can reduce life drastically. When repairing, make sure that you are connected with the same potential as the mass of the set via a wrist wrap with resistance. Keep components and tools also at this potential.

4. Together with the deflection unit and the possible multipole unit the flat square picture tubes applied form one whole. The deflection and multipole units have been adjusted in an optimum way in the factory. Adjustment of these units during repair is thus not recommended.
5. A set to be repaired should always be connected to the mains via a suitable isolating transformer.
6. Proceed with care when testing the EHT section and the picture tube.
7. Never replace any modules or other parts while the set is switched on.
8. Wear safety goggles during replacement of the picture tube.
9. Use plastic instead of metal alignment tools. This is in order to preclude short-circuits or to prevent a specific circuit from being rendered unstable.
10. On chassis versions up to and including issue number 3 the wires of the connecting cables are at both sides connected to the same pin numbers. This contrary to cables used in chassis versions having a higher issue number and in other types of sets. Exchange of cables of chassis versions up to and including issue number 3 by cables of versions having a higher issue number or cables from different types of sets is thus not allowed.

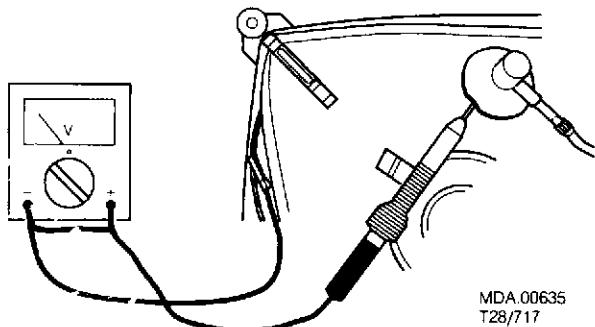


Fig. 1

CS 8 415GB

REMARKS

1. In case of faultfinding and/or repairs on the modules the accessibility of circuits and components can be enlarged by making use of extension PCBs. The ordering numbers for these extension PCBs are:

4-fold	4822 395 30262
5-fold	4822 395 30261
6-fold	4822 395 30259
8-fold	4822 214 31402
2. The direct voltages and waveforms should be measured relative to the nearest earthing point on the p.c. board.
3. The direct voltages should be measured as follows: Do not apply an aerial signal. Adjust receiver for minimum brightness, maximum saturation and contrast.
4. The waveforms should be measured under the following conditions:
 - a. Use a colour-bar pattern as input signal. (PM5519).
 - b. Connect an oscilloscope (0,1 V/div.-DC) to point 5 of IC7260 via an 10:1 attenuator probe. Set the saturation control to obtain 2,6V d.c..

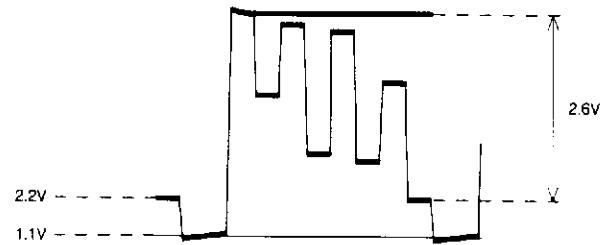


Fig. 2

MDA 00683
127-721

- c. Connect the oscilloscope to point 17 of IC7260.
- d. Set the brightness control so that the level of the black bar in the video signal is situated at 2,2V (see Fig. 2).
- e. Set the contrast control for a video signal amplitude of 2,6 V.
5. The CRT board is provided with printed spark gaps. Each spark gap is arranged between an electrode of the CRT and the aquadag coating.
6. In the production alternative semi-conductors may be used. However the semi-conductors specified in the parts list and circuit diagram can always be used as replacements.
7. Connectors used for the modules (board to board) have been gold-plated and must be replaced by the same type only.

MECHANICAL INSTRUCTIONS

1. To facilitate troubleshooting and repairing the set the chassis can be pulled out of the cabinet and placed against the right-hand side of the set.
2. After prizing up the clamping ring K with a screwdriver or side-cutting pliers the EHT and focus cable may be pulled off the line output transformer (see Fig. 3). When refitting the cable first press the clamping ring onto the transformer until a click is heard; after this the cable may be pressed in place. Make sure that the cable is pressed down well.

ELECTRICAL ADJUSTMENTS

A. ADJUSTMENTS TO THE MAIN PANEL (Fig. 4)

1. +140V power supply voltage

Connect a voltmeter (DC) between pin 2 of connector R13 and ground. Adjust 3670 for a voltage of 140V.

2. Horizontal synchronisation

Remove the screening cap of IF/SYNC unit 1001. Apply an aerial signal. Interconnect points 5 and 9 of item 7038 (IF/SYNC unit). Adjust 3055 until the picture is stationary. Remove the interconnection. Locate the screening cap.

3. Horizontal centring

This is adjusted with 3038 (IF/SYNC unit).

4. Vertical centring

This is adjusted with 1566.

5. Picture height

The picture height is adjustable with 3576.

6. Focussing

This is adjusted with the focussing potentiometer on the line output transformer (fig. 3).

7. V_{G2} adjustment

Adjust brightness and contrast for 2V.

Apply a black frame signal.

Connect an oscilloscope to the Red cathode of the picture tube.

Adjust with the G2 potentiometer on the line output transformer (see Fig. 3) the black level for 130V.

8. Chroma subcarrier oscillator

Apply a colour-bar pattern.

Interconnect points 24 and 25 of IC7260.

Connect a $470\ \Omega$ resistor between points 5 and 1 of IC7260.

Adjust 2267 so that colour pattern on the screen is practically stationary. Remove the resistor and the interconnection.

9. PAL delay line

Apply a generator signal from a PM5509 or PM5519. Set the generator to "DEM". Set contrast and brightness to normal and set the saturation control to 3/4 of its range. Adjust 3280 so that the venetian-blinds effect in the 3rd bar is minimal.

Subsequently, adjust 5270 until the venetian-blinds effect in the 1st and the 4th bar is also minimal. Readjust 3280 if necessary.

10. Chroma trap in the luminance circuit

Use a colour-bar pattern and set the receiver controls to their normal settings.

Connect an oscilloscope to point 8 of IC7260 and adjust 5261 for minimum amplitude of the chrominance signal which is situated on the various brightness steps of the luminance signal.

11. RF-AGC

If the picture of a strong local transmitter is reproduced distorted, adjust potentiometer 3092 on IF/SYNC unit 1001, until the picture is no longer distorted. To achieve this the screening cap of the IF/SYNC unit has to be removed.

B. ADJUSTMENTS TO THE CRT BOARD

1. Picture width

The picture width is adjustable with 3591.

2. East-West correction

Is adjusted with 3592.

C. ADJUSTMENTS TO THE CCT DECODER

1. Connect pin 22 of IC7785 to ground.

Adjust 2802 for a free-running frequency of 6.010 MHz \pm 2.5 kHz at pin 17 of IC7785.

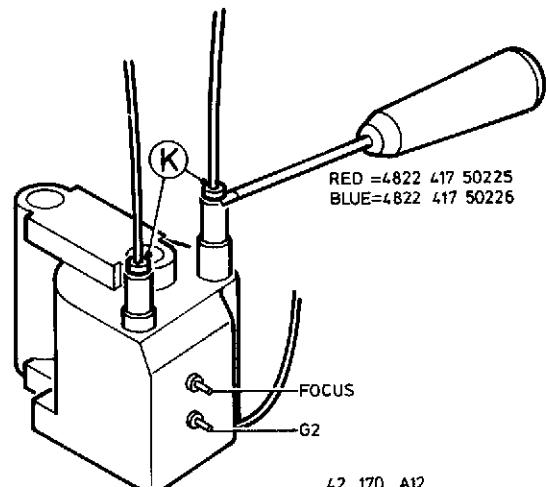


Fig. 3

CARRIER PANEL

			
CNX62	4822 130 90121	5108	4822 157 53064
HCF4053BE	4822 209 71749	5109	4822 157 53064
LA7910	4822 209 10892	5259	4822 157 52287
LN524RAP	4822 130 90388	5260	4822 157 53065
L7812CV	5322 209 86176	5260	4822 157 52265 for amtsblatt
TDA3562A/N5	4822 209 71751	5261	4822 157 52807
TDA8190	4822 209 70872	5262	4822 157 53093
TEA1039/N4	4822 209 83104	5270	4822 157 52808
TMP47C432AP	4822 209 72038	5271	4822 157 52055
		5608	4822 157 53069
		5611	4822 150 50073 line output
		5620	4822 140 10325 line driver
BC328	4822 130 44104	5629	4822 140 10324
BC337	4822 130 40855	5653	4822 157 53068
BC337-40	4822 130 41344	5654	4822 148 60165 SOPS
BC368	5322 130 44647	5655	4822 157 51195
BC547C	4822 130 44503	5656	4822 157 51157
BC548	4822 130 40938	5658	4822 157 51195
BC548B	4822 130 40937	5659	4822 157 53062
BC548C	4822 130 44196		
BC558	4822 130 40941		
BD227	5322 130 44661		
BD437	4822 130 40982	3102	4822 111 30499 4.7 Ω 0.33W
BD438	4822 130 40995	3280	4822 100 20148 1 kΩ potm.
BUT11AF	4822 130 42679	3283	4822 111 30593 3.3 Ω 0.33W
BU508A	4822 130 42164	3570	4822 116 51166 8.2 kΩ 2.5W
		3571	4822 111 30821 3.9 Ω 0.5W
		3576	4822 101 10818 100 Ω potm.
		3610	4822 116 30323 150 kΩ NTC
BYD33D	4822 130 42488	3628	4822 111 30504 6.8 Ω 0.33W
BYD33G	4822 130 42489	3653	4822 116 40065 PTC
BYD33J	4822 130 42606	3656	4822 116 80288 100 kΩ 2W
BYV26C	4822 130 32343	3657	4822 115 10094 1.5 kΩ 7W
BYV95A	4822 130 41601	3660	4822 113 80429 0.1 Ω 2W
BYV95B	4822 130 41486	3667	5322 116 54272 1.5 kΩ 2.5W
BY228	4822 130 41275	3670	4822 100 10361 100 Ω potm.
BZX79-C3V9	4822 130 31981	3672	4822 111 30483 1 Ω 0.33W
BZX79-C4V7	4822 130 34174	3875	4822 111 30593 3.3 Ω 0.33W
BZX79-C5V6	4822 130 34173	3944	4822 101 10819 50 kΩ potm.
BZX79-C6V2	4822 130 80303		
CQS51-4	4822 130 80309		
ZTK33B	4822 130 30959		
1N4148-75	4822 130 33939		
1N5061	4822 130 31933		

CARRIER PANEL

2113	4822 124 41334	470	µF	35 V
2123	4822 124 40435	10	µF	50 V
2267	4822 125 50045	20	pF	trimm.
2521	4822 124 40434	22	µF	35V
2526	4822 124 40434	22	µF	35V
2610	5322 121 44357	7.5	nF	2kV
2611	4822 121 40479	390	nF	250V
2619	4822 121 41339	2.2	nF	2kV
2621	4822 124 22257	22	µF	250V
2652	5322 121 44222	330	nF	250V
2656	4822 124 22172	150	µF	385V
2663	4822 121 41531	1000	pF	250V
2668	4822 124 40724	1000	µF	35V
2670	4822 124 22257	22	µF	250V
2672	4822 124 40724	1000	µF	35V
2673	4822 124 40201	1000	µF	16V
2735	4822 124 40723	2200	µF	16V
2934	4822 122 32149	27	pF	100V
2935	4822 122 32149	27	pF	100V
1652	4822 253 30024	T1.6A		
1653	4822 253 10046	T1.6A		
1654	4822 253 10046	T1.6A		
10J	4822 265 40596	2P		
11B	4822 265 30389	2P		
12G	4822 265 30407	3P		
13R	4822 267 40722	6P		
14R	4822 267 40722	6P		
15G	4822 290 40295	7P		
16R	4822 267 40665	3P		
18G	4822 417 50217	4P		
19G	4822 267 40648	5P		
20G	4822 267 50591	6P		
21G	4822 264 50148	8P		

PICTURE TUBE PANEL



BC337	4822 130 40855
BC548B	4822 130 40937
BC556	4822 130 40989
BC558	4822 130 40941
BF422	4822 130 41782
BF423/01	4822 130 60703
BF819	4822 130 42159
BF869	4822 130 41773



BAV21	4822 130 30842
BYD33G	4822 130 42489
1N4148-75	4822 130 33939



5401	4872 157 50964
------	----------------



3403	5322 116 53619	6.34 kΩ	0.6 W
3406	5322 116 53263	6.19 kΩ	0.6 W
3426	5322 116 80076	105	kΩ 0.6 W
3427	4822 116 80327	137	kΩ 5 W
3428	5322 116 80076	105	kΩ 0.6 W
3439	4822 116 52399	1.5	kΩ 0.5 W
3440	4822 116 52399	1.5	kΩ 0.5 W
3444	4822 116 52399	1.5	kΩ 0.5 W
3445	4822 116 80328	470	Ω 0.5 W
3591	4822 100 10051	22	kΩ potm.
3592	4822 100 10052	100	kΩ potm.
3599	4822 111 30526	47	Ω 0.33W



2407	4822 122 33109	2.2 nF 1kV
------	----------------	------------



22G	4822 290 40295	7P
23R	4822 267 40722	6P



22G	4822 265 40252	7P
23R	4822 267 30546	6P
	4822 255 70216	socket PT

MUTE PANEL

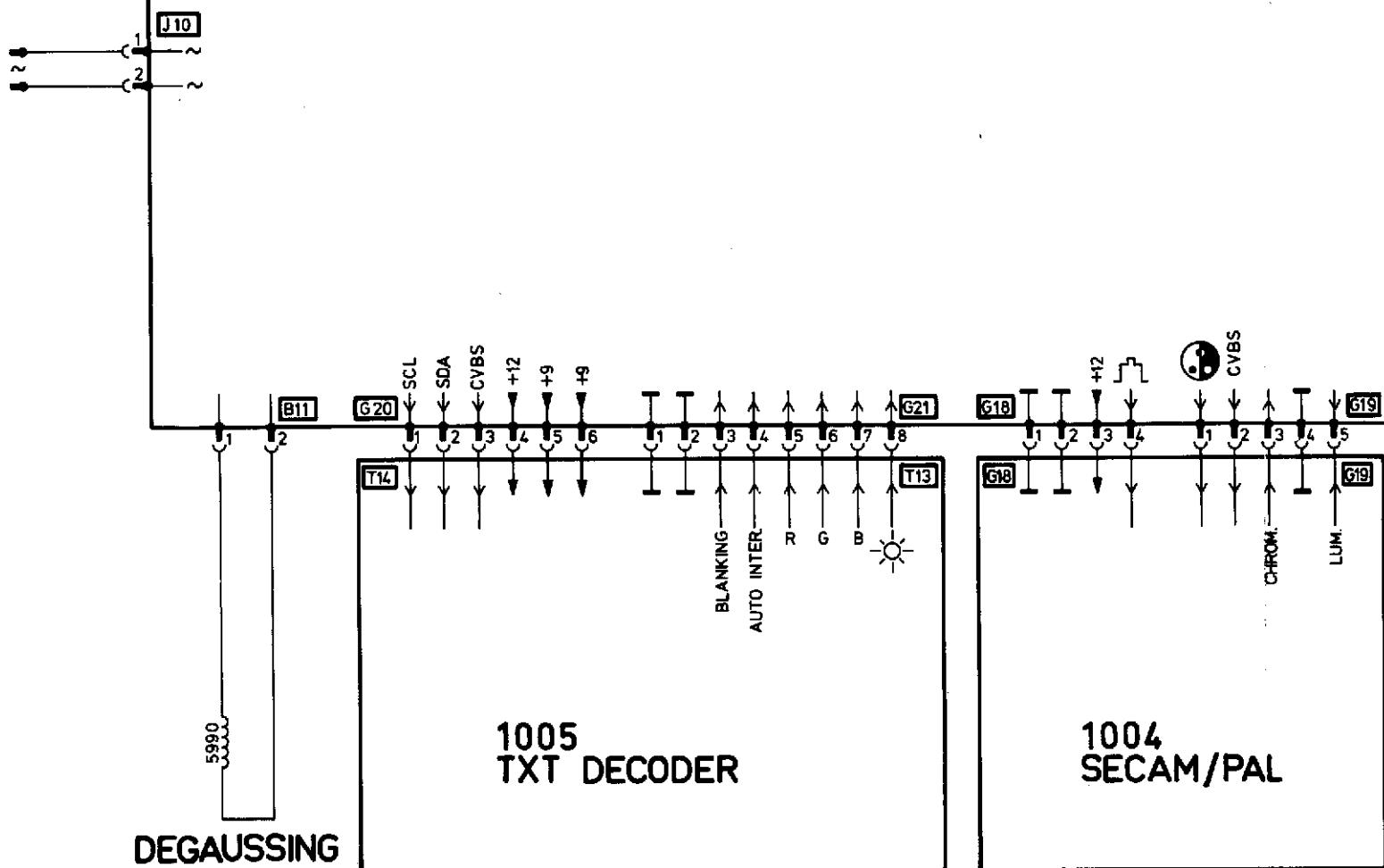


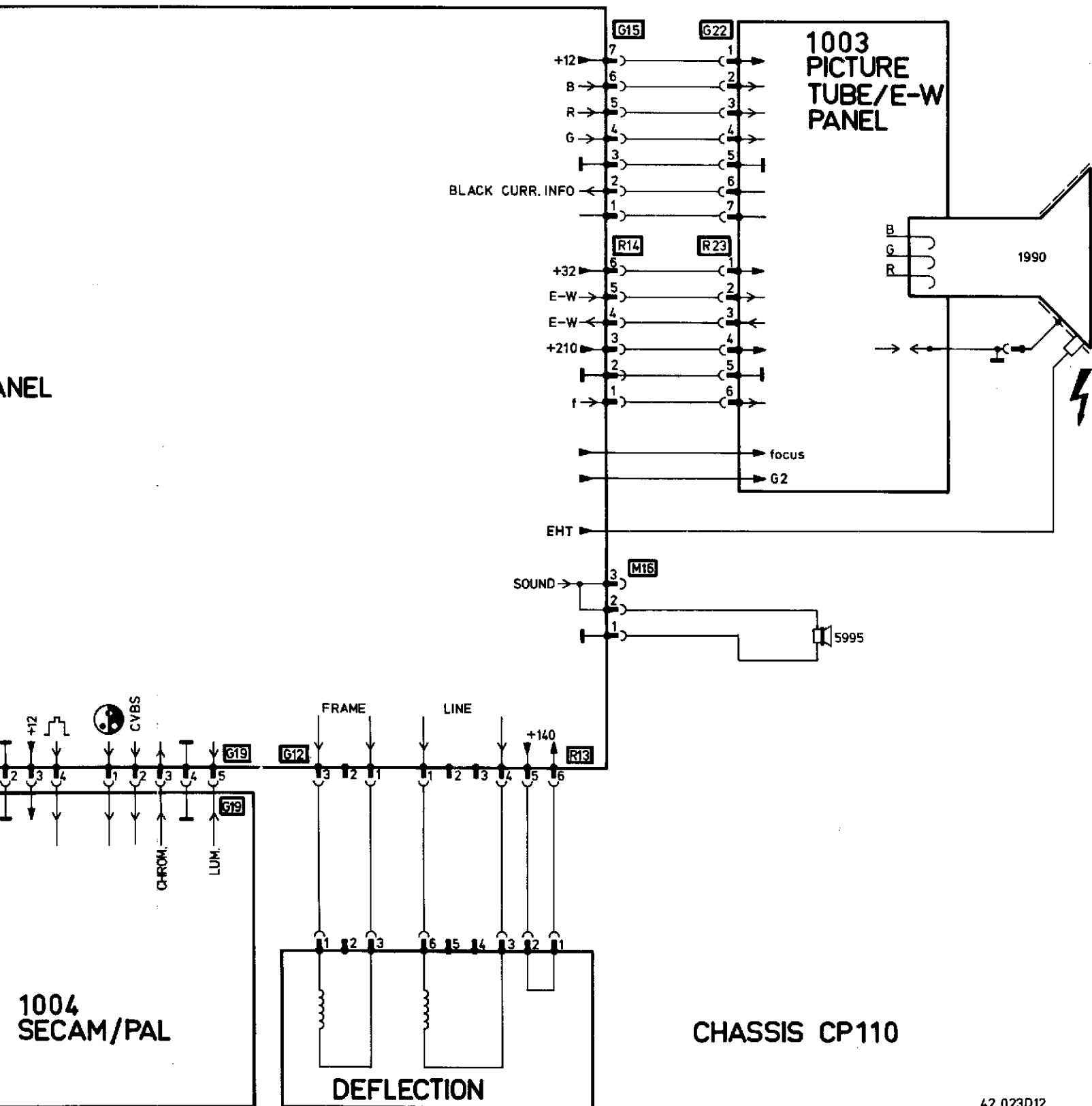
BC548B	4822 130 40937
BC558B	4822 130 44197



1N4148-30	4822 130 33941
-----------	----------------

**1070
CARRIER PANEL**

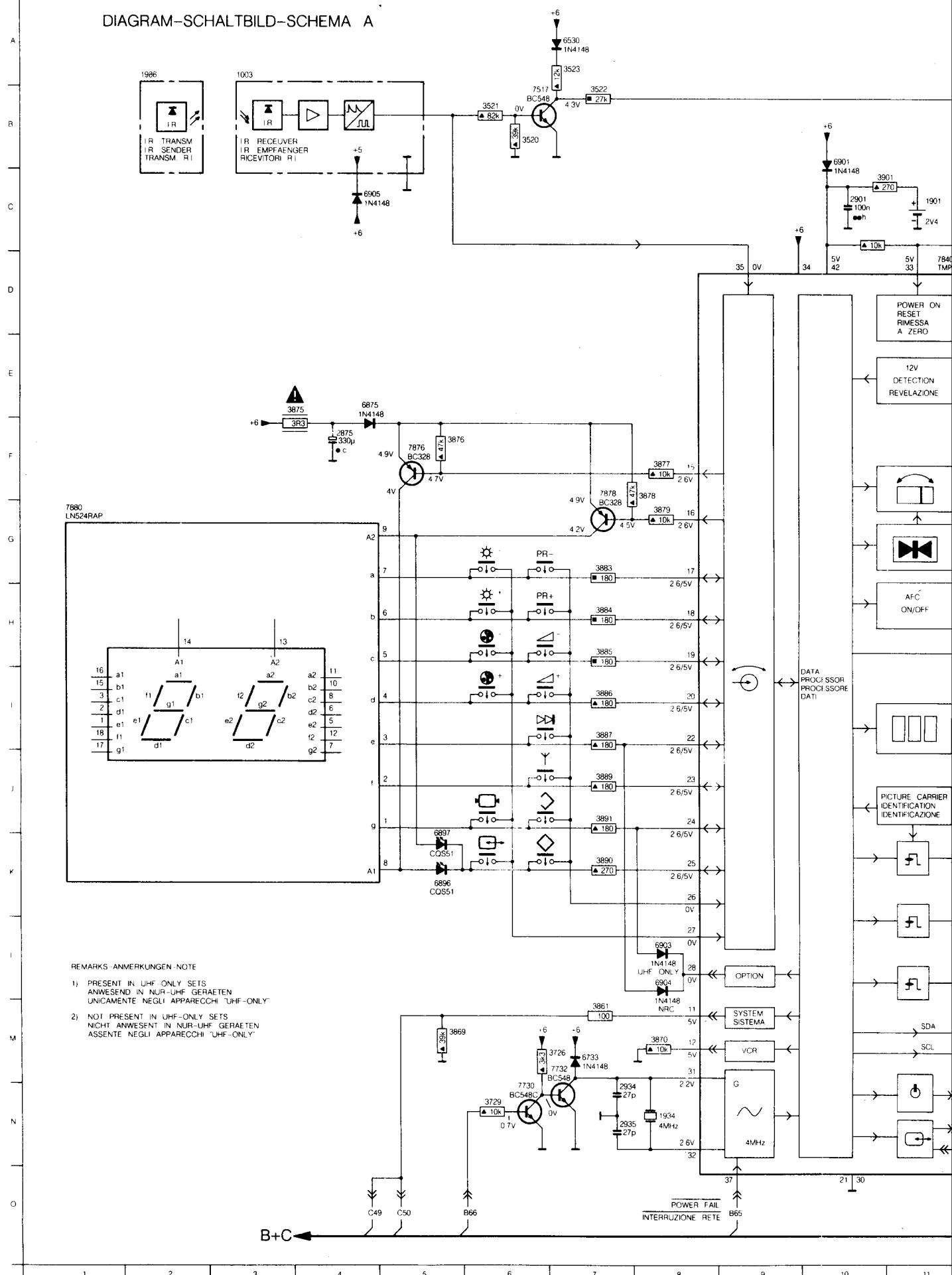




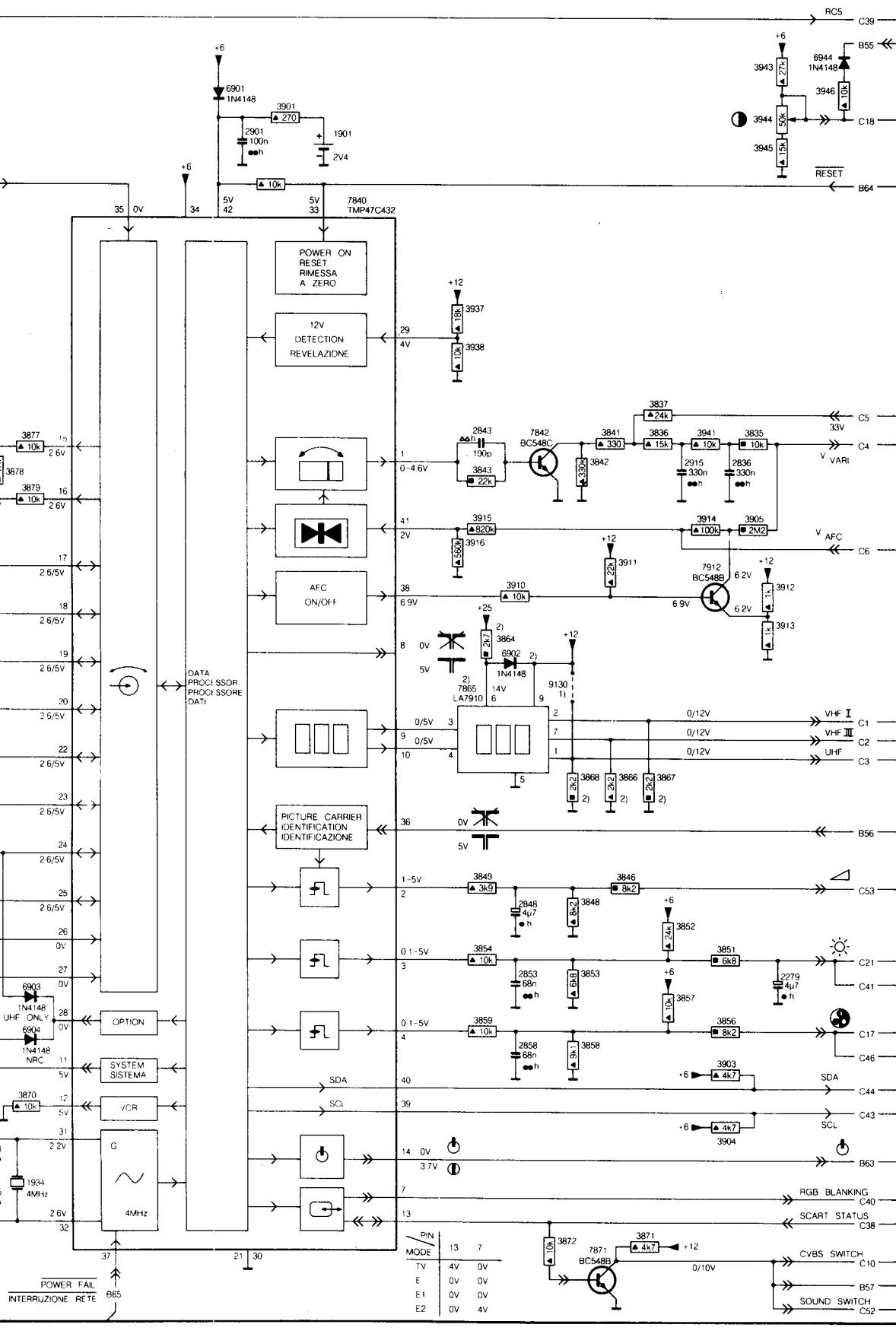
- 13- 4822209 72038
33 - 4822 209 73665

6

DIAGRAM-SCHALTBILD-SCHEMA A



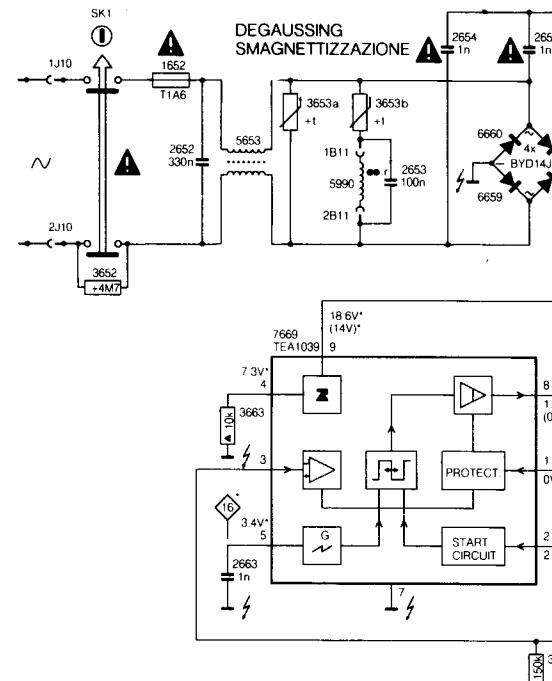
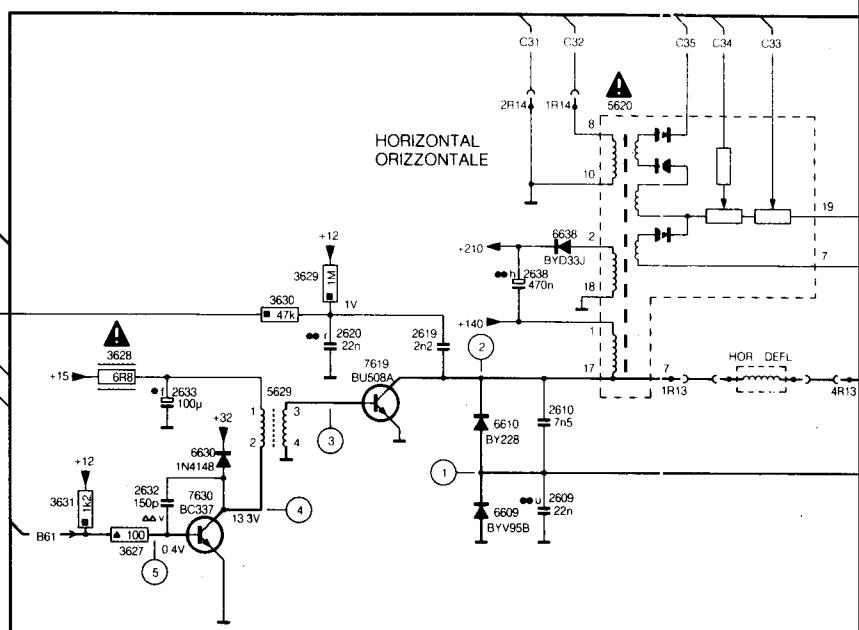
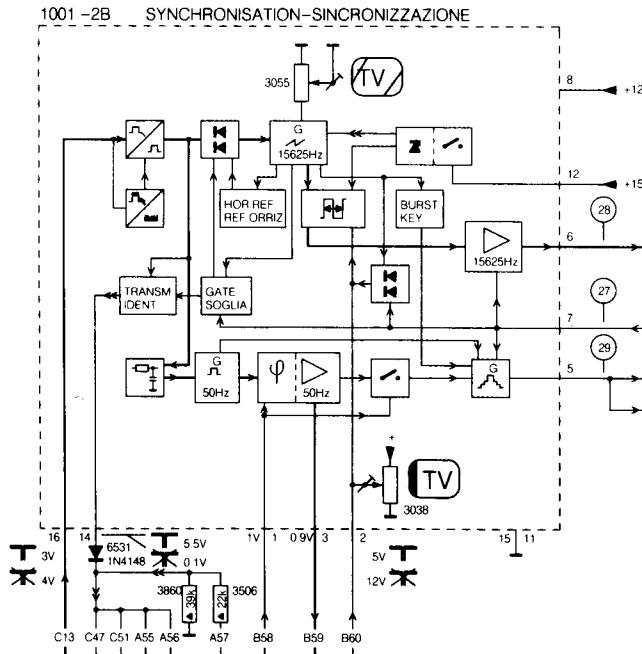
VST2 SYSTEM SISTEMA VST2



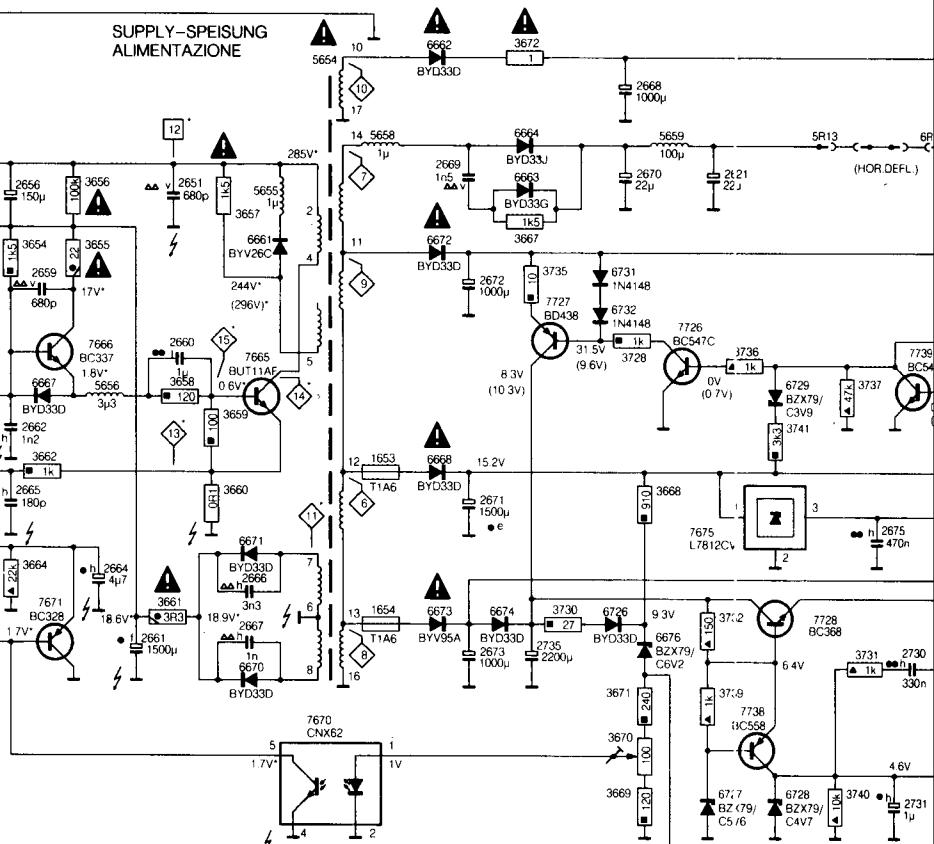
CP110

PRS 0208
T-04 72

1001-2B SYNCHRONISATION-SINCRONIZZAZIONE

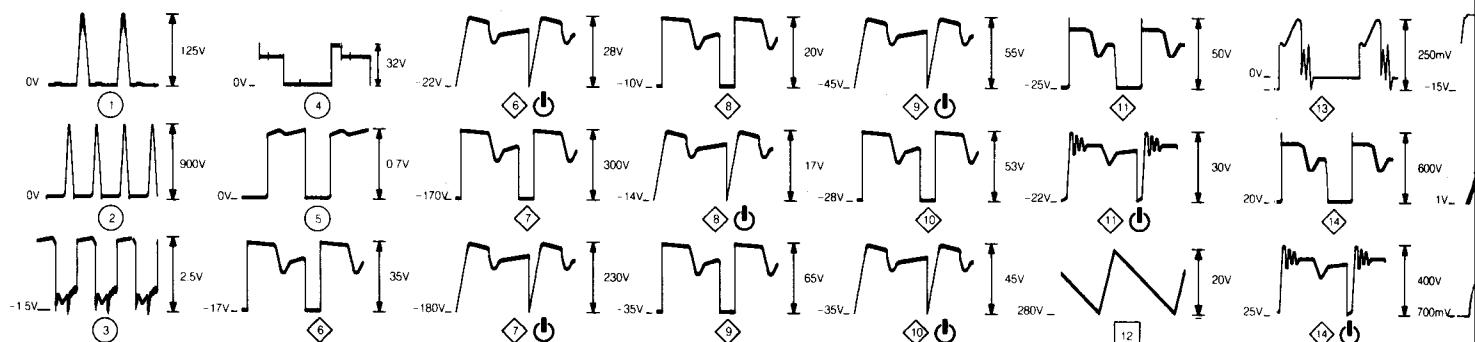


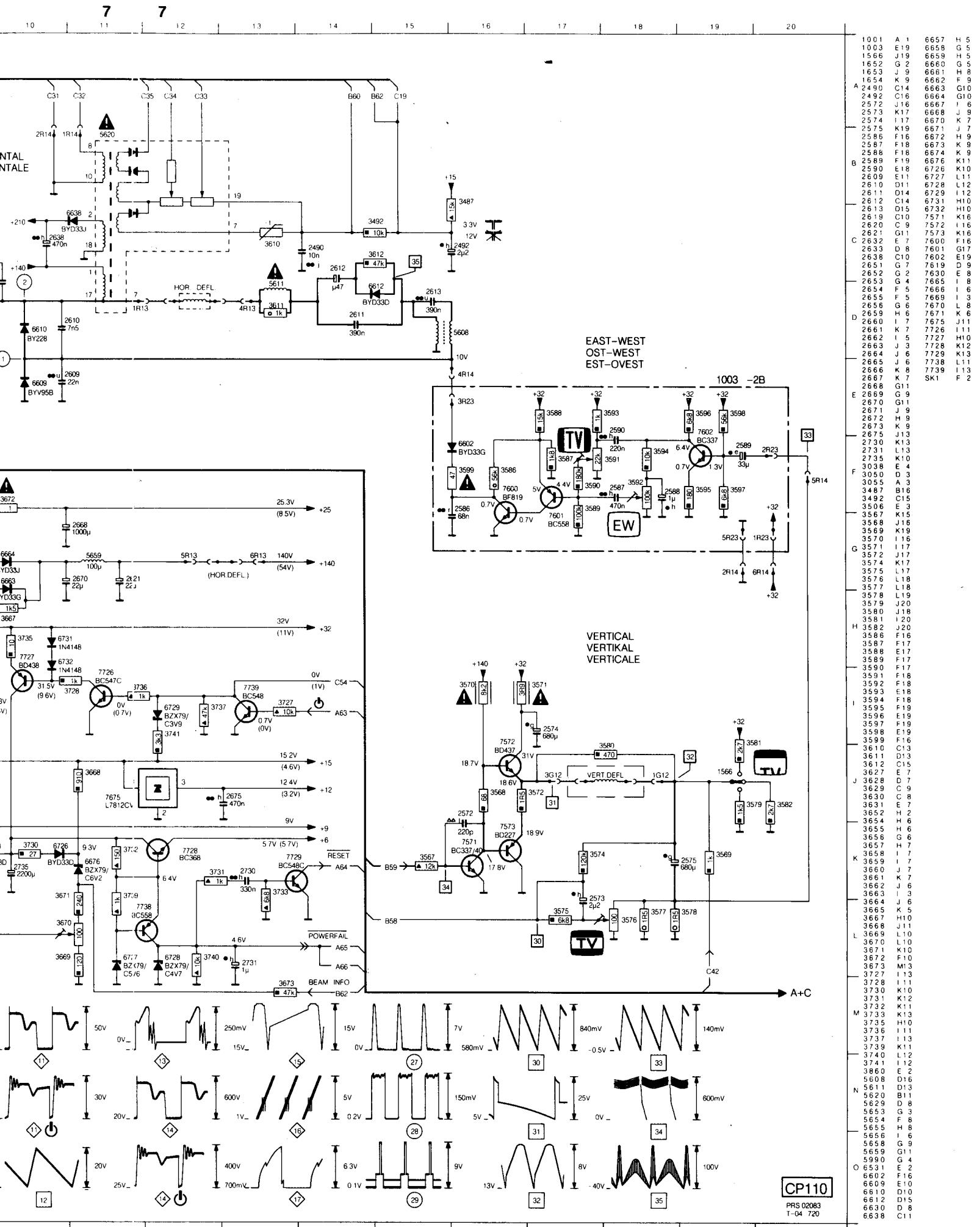
SUPPLY-SPEISUNG ALIMENTAZIONE



MEASURED IN RESPECT OF MISURATO NEI CONFRONTI DI

(V) →



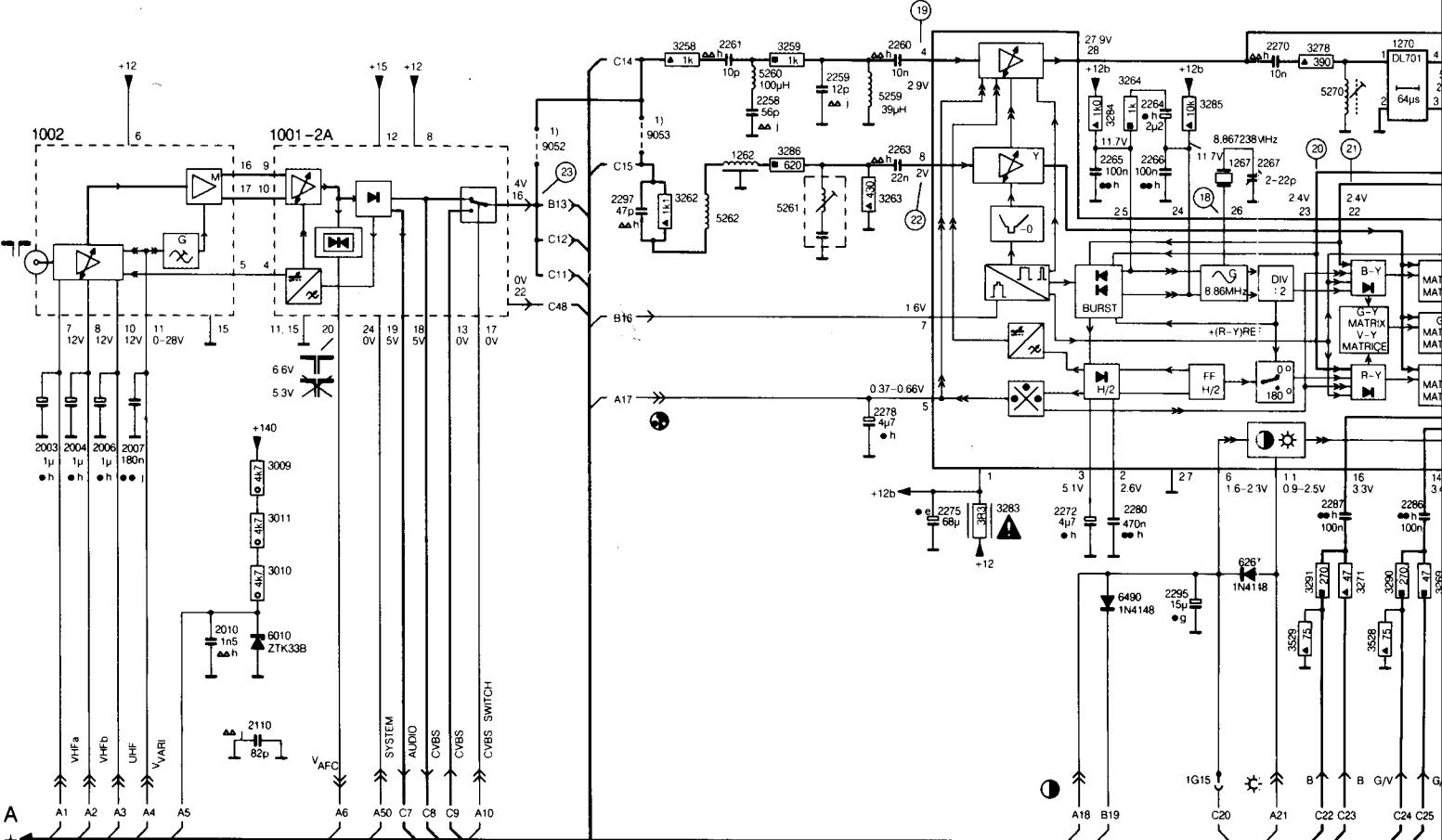


1001	C 3	1270	B12	2104	K14	2114	K19	2260	B 8	2274	B14	2292	F14	2405	G16	2523	L 14	3101	I 18	3115	K20	3265	J 8	3283	F 9	3403	B16	3413	H16	3422	E
1002	C 1	1990	D21	2105	K16	2115	J20	2261	B 7	2275	F 8	2295	G10	2406	A16	2524	L 4	3102	I 20	3121	K18	3267	F13	3284	B10	3404	C16	3414	G16	3423	
1003	A15	2003	E 1	2106	K16	2116	K17	2263	C 8	2278	E 8	2296	F15	2407	E20	2525	L 5	3103	J 13	3122	K18	3269	F13	3285	B11	3405	E16	3415	G15	3424	
1004	M3	2004	E 1	2107	I 16	2118	K18	2264	B10	2280	F10	2297	C 6	2408	G20	2526	L 14	3104	J 14	3132	I 21	3271	F13	3286	C 7	3403	E16	3416	H17	3425	
1005	I 10	2006	E 1	2108	I 15	2123	L18	2265	C10	2285	F13	2298	C14	2409	H19	2527	L 4	3106	L 19	3258	B 6	3278	B12	3287	J 8	3407	C16	3417	C17	3426	
1103	J13	2007	E 2	2109	I 15	2124	K17	2266	C10	2286	F12	2401	B1	2503	K 3	3009	F 3	3107	K19	3259	B 7	3279	B14	3289	F13	3409	I-18	3418	G17	3427	
1104	I 14	2010	G 2	2110	H 3	2125	K17	2267	C11	2287	F12	2402	F16	2507	L 4	3010	F 3	3111	K20	3262	C 6	3280	B14	3291	F11	3411	I-17	3419	E17	3429	D
1262	C 7	2101	I 20	2111	K20	2258	B 7	2270	B11	2290	F14	2403	D16	2520	K16	3011	F 3	3113	K20	3263	C 8	3281	B13	3291	F11	3411	I-17	3420	B17	3429	B
1267	C11	2102	I 20	2113	J20	2259	B 8	2272	F 9	2291	F14	2404	H17	2521	K 4	3059	L 8	3114	K20	3264	B10	3282	B13	3402	C16	3412	C16	3421	G17	3430	A

8

8

DIAGRAM-SCHALTBILD-SCHEMA C

CHANNEL SELECTOR
KANALWAELER
SELETTORE CANALEIF AMPL.+DET. +AGC. +AFC.
ZF VERST. +DEM. +AVR. +AFA.
AMPL. FI +RIVEL. CAG. +CAF.CHROMINANCE + LUMINANCE
FARBART + LEUCHTDICHE
CROMINANZA + LUMINANZA

REMARKS-ANMERKUNGEN-NOTE

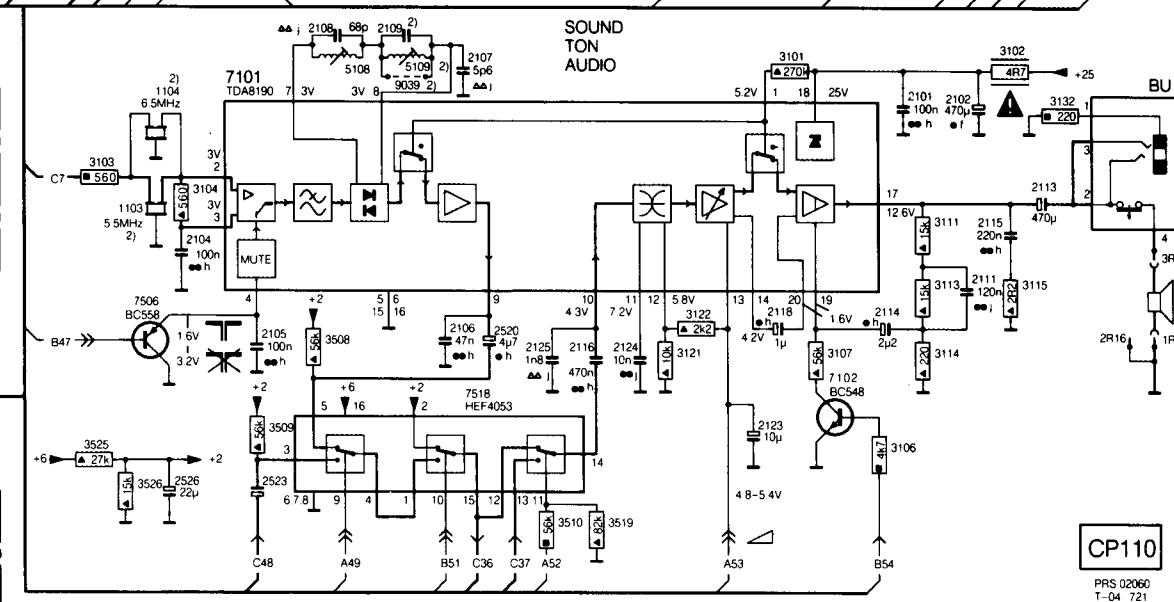
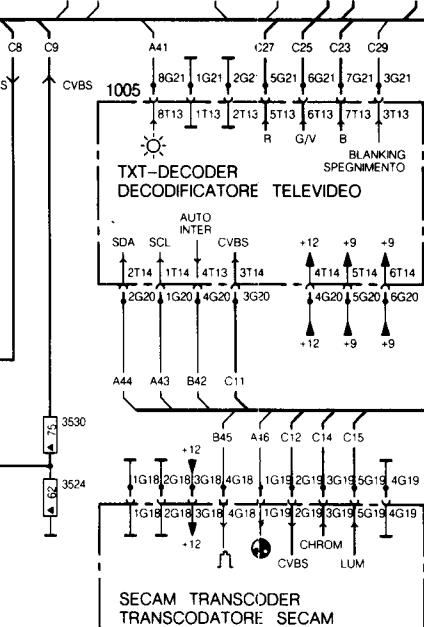
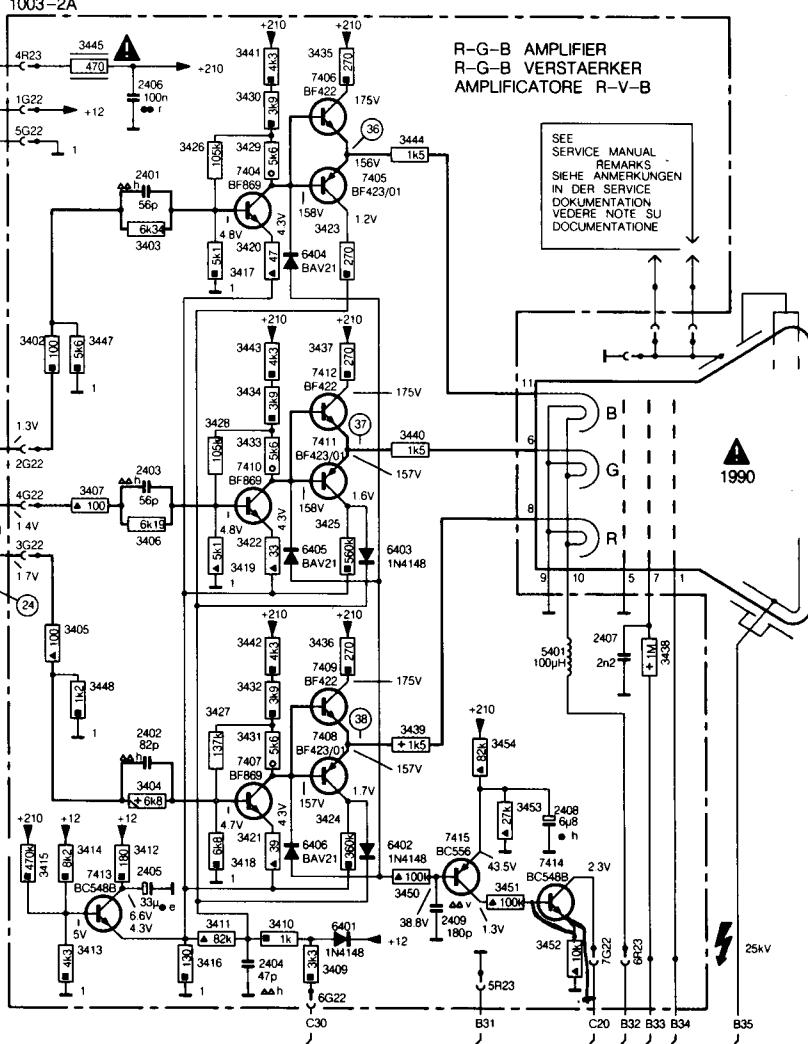
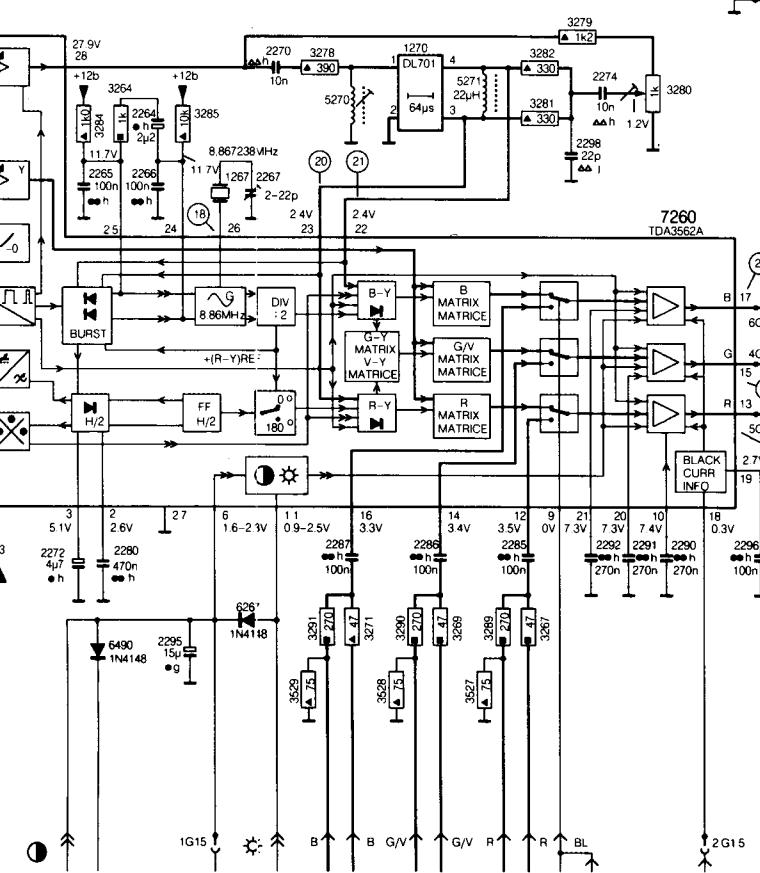
- 1) -NOT PRESENT FOR PAL/SECAM SETS
-NICHT PRESENT IN PAL/SECAM GERÄTEN
-ASSENTE SUI MODELLI CON PAL/SECAM
- 2) FOR VERSION:

	BG 5.5MHz	I 6MHz	K-BG 5.5/6.5MHz
1103	X	X	X
1104	-	-	X
2109	-	-	X
5109	-	-	X
9039	X	X	-

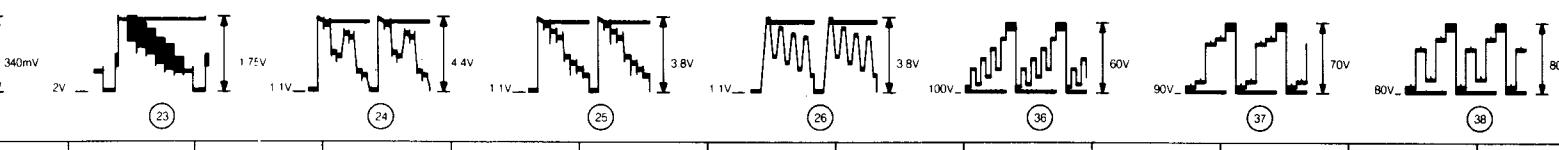
X - PRESENT - - NOT PRESENT

3265	J 8	3283	F 9	3403	B 16	3413	H 16	3422	E 17	3431	F 17	3440	D 18	3451	G 19	3507	K 3	3517	J 6	3530	L 10	5271	B 13	6405	E 18	7407	F 17	7505	L 3		
3267	F13	3284	B10	3404	G 16	3414	G 16	3423	B 18	3432	F 17	3441	A 17	3452	H 19	3508	K 15	3518	L 7	3531	F 19	6406	G 18	7408	F 18	7506	K 13				
3269	F13	3285	B11	3405	E 16	3415	G 15	3424	G 18	3433	D 17	3442	E 17	3453	G 19	3509	L 15	3519	M 7	5108	I 15	5995	K 21	6409	G 10	7409	F 18	7512	J 5		
3271	F12	3286	C 7	3406	E 16	3416	H 17	3425	E 18	3434	C 17	3443	E 18	3454	F 19	3510	M 7	5109	I 16	6010	G 3	7101	I 14	7410	D 17	7514	J 8				
3278	B12	3287	J	3407	C 16	3417	C 17	3426	B 17	3435	A 18	3444	B 18	3450	K 5	3511	J 5	3525	L 10	5109	B 8	6267	F 11	7102	L 19	7411	C 14	7412	D 18	7516	K 9
3279	B14	3289	F13	3409	H 18	3418	G 17	3427	F 17	3436	E 18	3445	A 16	3502	K 5	3512	J 5	3526	L 13	5259	B 7	6401	H 18	7260	C 14	7413	C 18	7518	L 16		
3280	B14	3290	F12	3410	H 17	3419	E 17	3428	D 17	3437	C 18	3447	D 16	3503	L 3	3513	J 9	3527	G 13	5261	C 7	6402	G 18	7404	B 17	7413	G 16	7516	C 5		
3281	B13	3291	F11	3411	H 17	3420	B 17	3429	B 17	3438	F 20	3448	F 16	3504	L 3	3514	J 9	3528	G 12	5262	C 7	6403	E 18	7405	B 18	7414	G 19	9053	C 6		
3282	B13	3292	F11	3412	C 16	3421	G 16	3430	A 17	3439	F 18	3450	G 18	3505	L 4	3515	K 8	3529	G 11	5270	B 12	6404	E 18	7406	B 18	7415	G 19	9052	M 4		

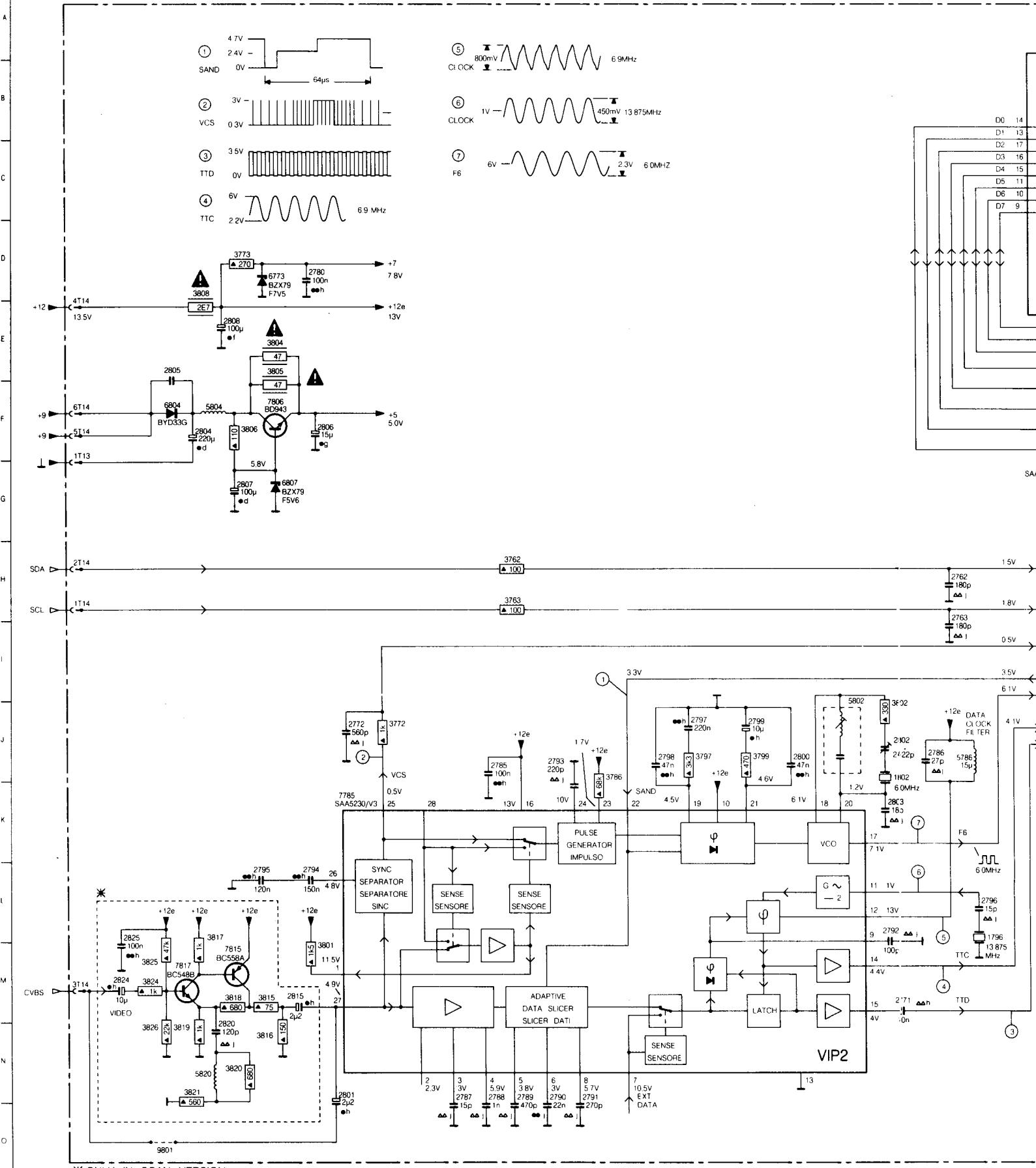
CHROMINANCE + LUMINANCE
FARBART + LEUCHTDICHE
CROMINANZA + LUMINANZA



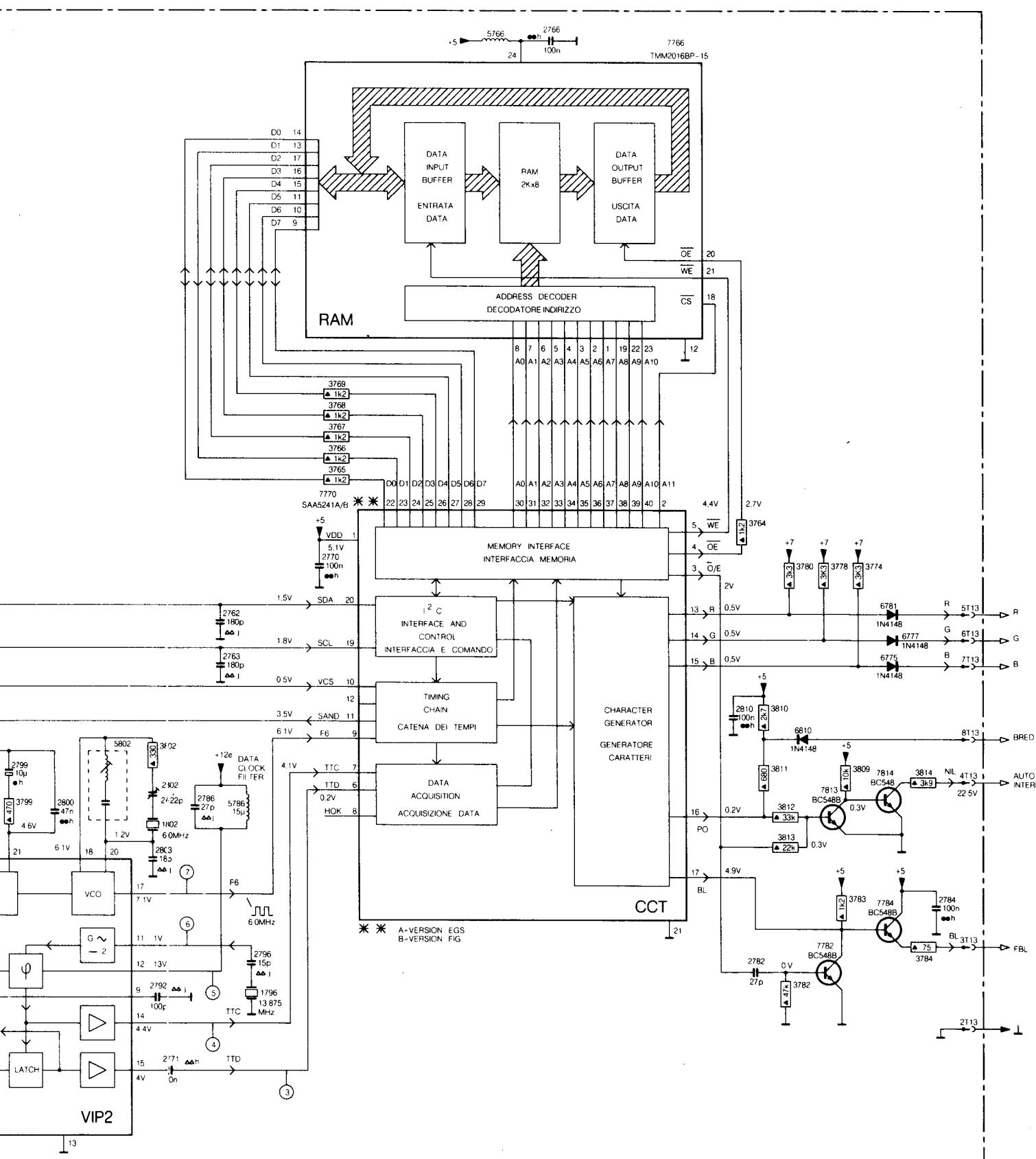
CP110

PRS 02060
T-04 721

1005 CCT-DECODER/DECODATORE



ONLY IN SCAN VERSION

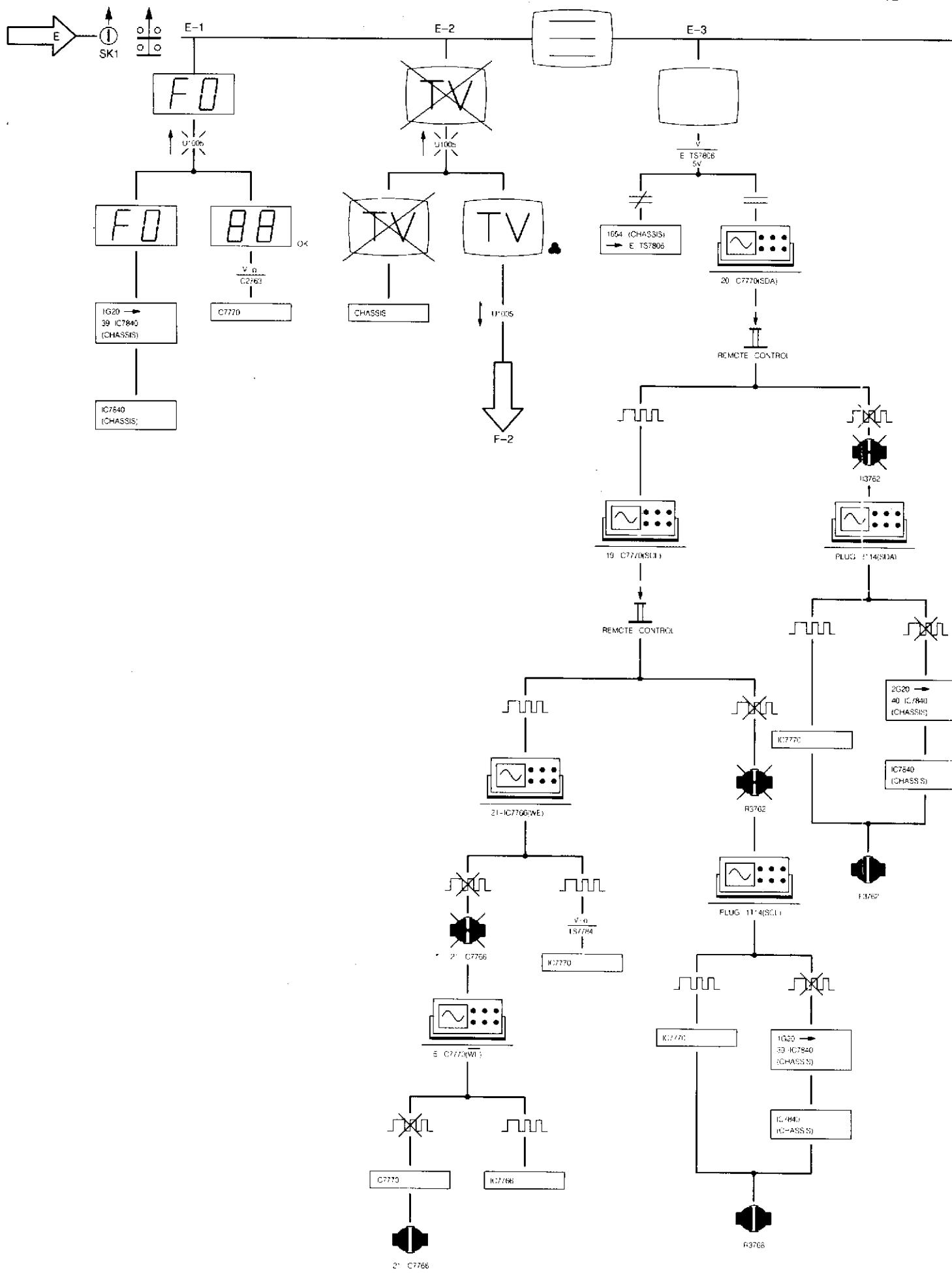


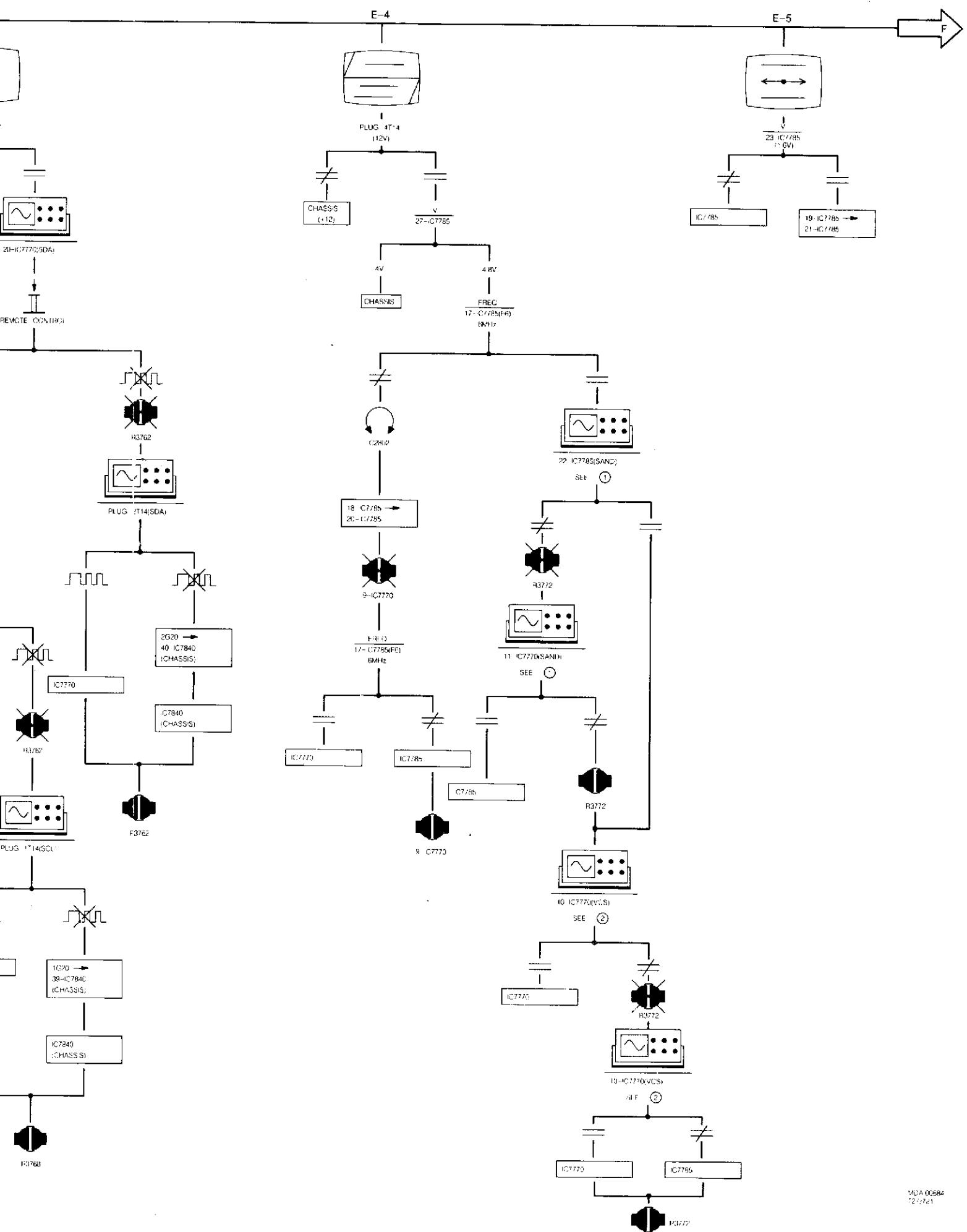
THE DC VOLTAGES ARE MEASURED WITH
A PATTERN GENERATOR AND THE TV SET
IN TELETEXT MODE

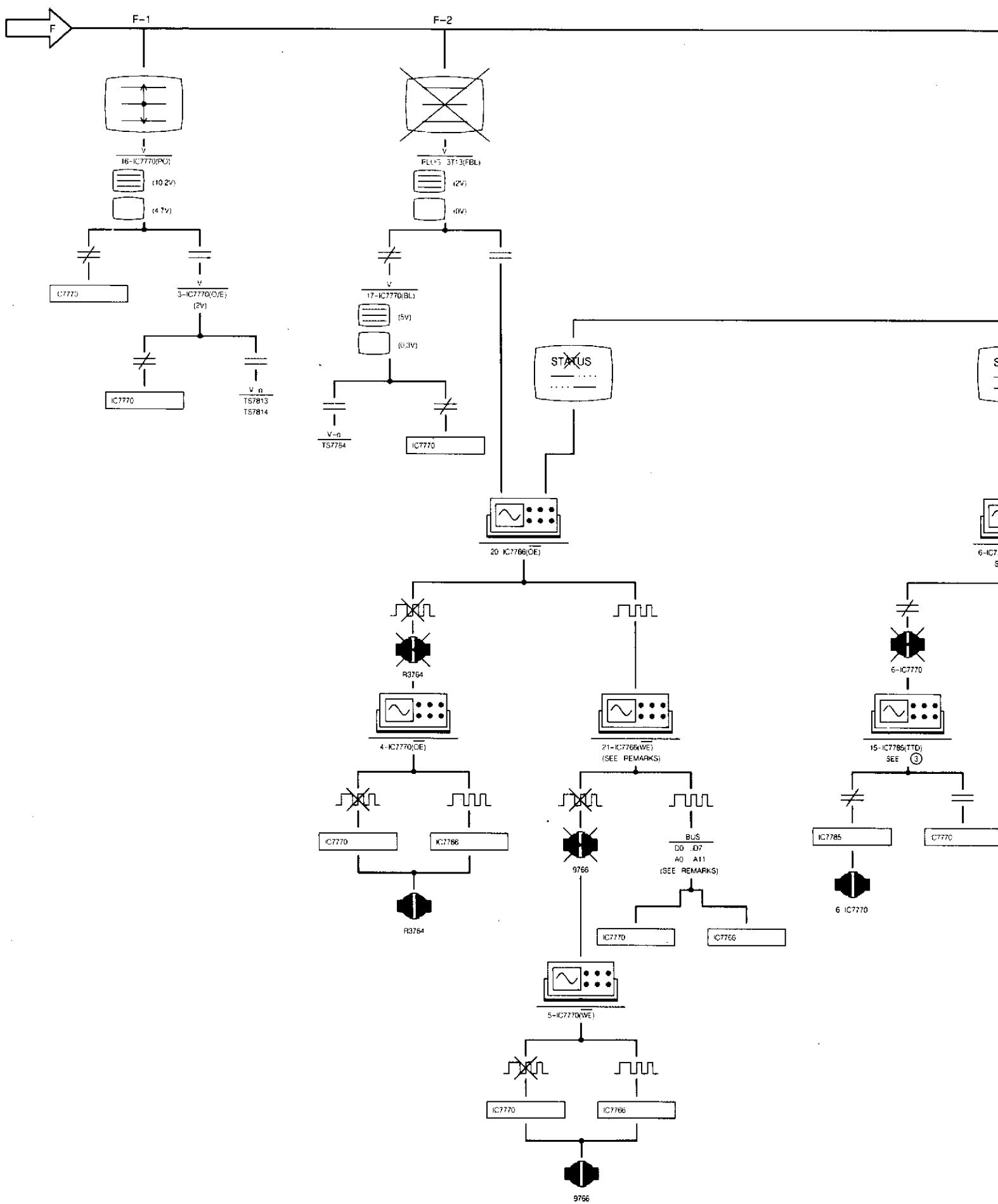
P110

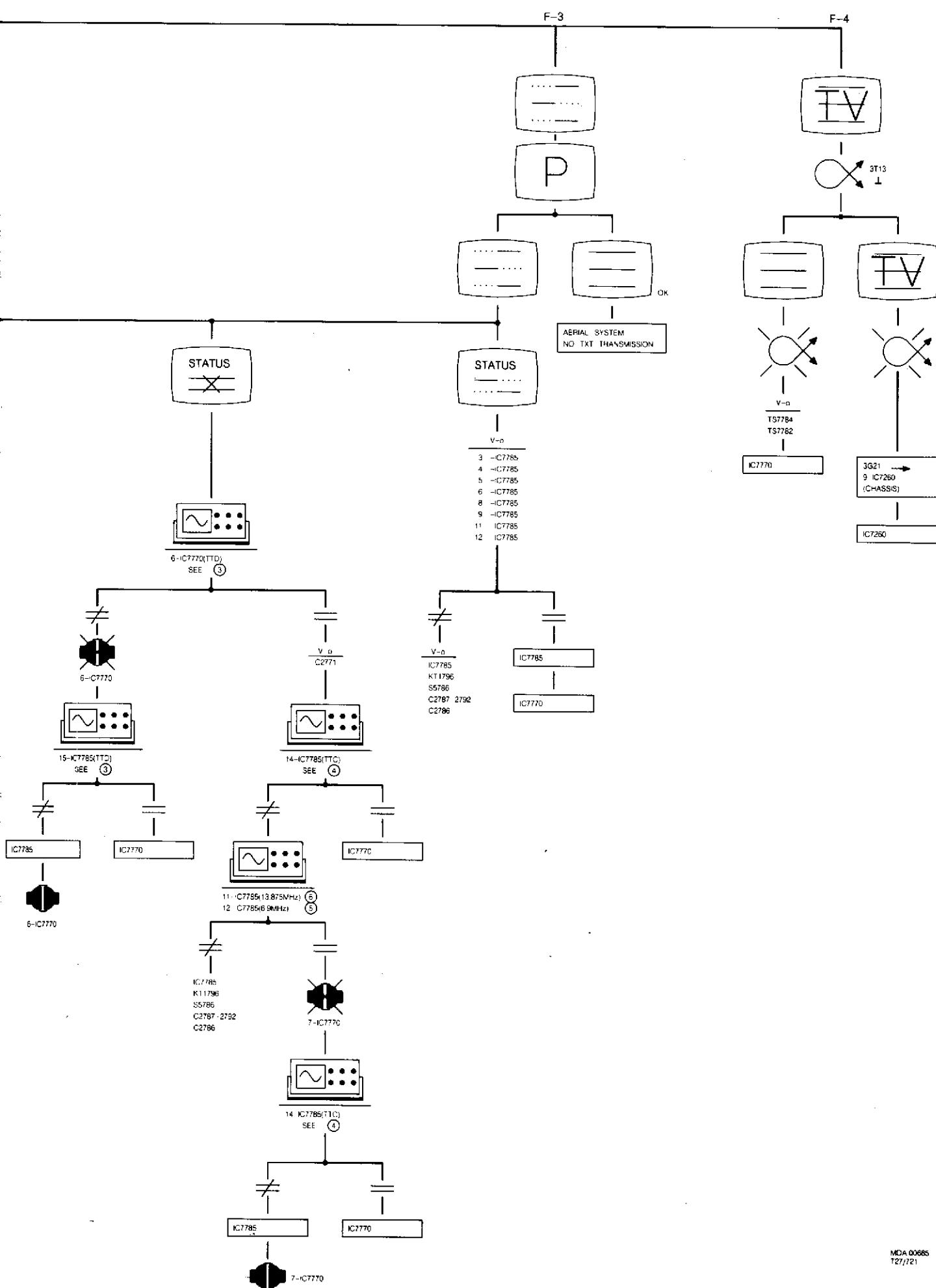
TXT DECODER

				
SAA5241B SAA5241A SAA5231/V3 TMM2016BP-15	4822 209 82785 4822 209 82819 4822 209 71491 4822 209 71527	3804 3805 3808	4822 111 30526 4822 111 30526 4822 111 30494	
				
BC548B BC559 BD943	4822 130 60529 4822 130 40963 5322 130 44921	2782 2786 2787 2796 2799 2802	4822 122 32192 4822 122 32192 4822 122 31197 4822 122 31197 4822 124 40435 4822 125 50045	
		VARIOUS		
BYD33G BZX79-F5V6 BZX79-F7V5 1N4148-75	4822 130 42489 4822 130 34173 4822 130 80135 4822 130 33939	1796 1802	4822 242 71417 4822 242 70932	crystal 13,875 MHz resonator 6,0 MHz
				
5766 5786 5804 5820	4822 157 51462 4822 157 52224 4822 157 51157 4822 157 53001	T13 T14	4822 265 40471 4822 265 40469	8P 6P







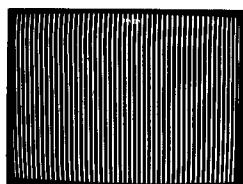


LOCATING BUS ERRORS IN THE TELETEXT DECODER

15 15

1. Loosen resistor 3784 on teletext decoder 1005. Connect a piece of wire with measuring pin to pin 9 of IC7260.
2. Connect a TV pattern generator (i.e. PM5519) and tune the receiver normally. Apply a white pattern and select the teletext mode with the remote control.

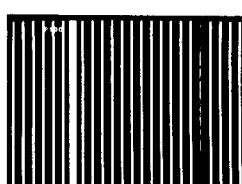
3. When transferring the measuring-pin to the points of IC7770 which are indicated under the pictures below a defined pattern is not present, but a uniform white or dark picture arises, there is question of short-circuit or an open connection on the relevant point. It may be caused by one of the two ICs, namely IC7766 - IC7770.



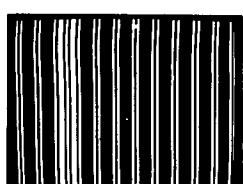
OE 4-IC7770



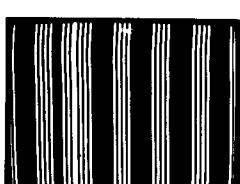
WE 5-IC7770



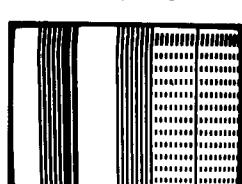
A0 30-IC7770



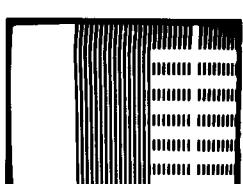
A1 31-IC7770



A2 32-IC7770



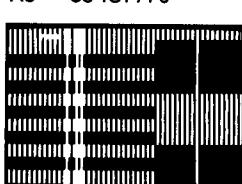
A3 33-IC7770



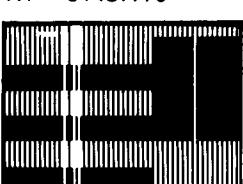
A4 34-IC7770



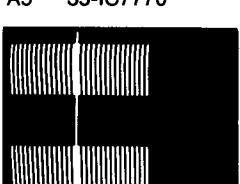
A5 35-IC7770



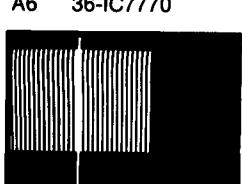
A6 36-IC7770



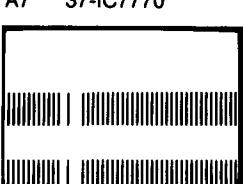
A7 37-IC7770



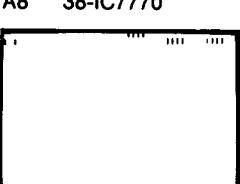
A8 38-IC7770



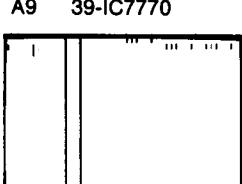
A9 39-IC7770



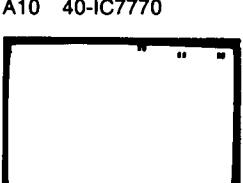
A10 40-IC7770



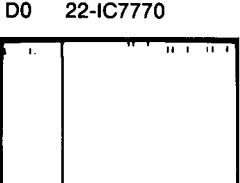
D0 22-IC7770



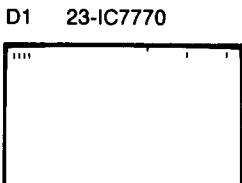
D1 23-IC7770



D2 24-IC7770



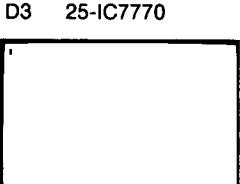
D3 25-IC7770



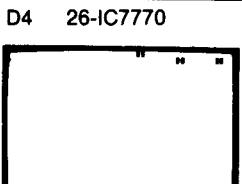
D4 26-IC7770



D5 27-IC7770



D6 28-IC7770



D7 29-IC7770

QUICK DIAGNOSIS CHART

Indication on programme display Indikation auf Programm Anzeige	Incorrect functioning Unrichtiges Funktionieren	Correct functioning Richtiges Funktionieren	Possible defective component Eventuelle schadhafte Komponente
<i>F0</i>			IC7770 C2763 (U1005) IC7840
<i>F1</i>			+12 supply +12 Speisung IC7840
<i>F2</i>			IC7840
<i>F3</i>			IC7840
<i>BB</i> O.K.	R.C. commands Fernbedienungs- befehle	Local keyboard commands Nahbedienungs- befehle	U1003 (IR-receiver)
<i>BB</i> O.K.	□		IC7865

SECAM/PAL TRANSCODER



TDA3592A/N3 4822 209 11389



BAT85 4822 130 31983



5316	4822 156 10998
5325	4822 156 21125
5337	4822 156 21027
5338	4822 157 52278
5347	4822 157 53046



3335	4822 100 21049	2.2 kΩ potm.
3344	4822 111 30508	10 Ω 0.33 W
3347	4822 101 10651	470 Ω potm.



2314	4822 121 42995	680 pF 100V
2315	4822 121 42994	1.5 nF 100V
2328	4822 124 40435	10 μF 50V
2332	4822 125 50045	20 pF trimm.

VARIOUS

1320	4822 157 53047	delay line DL450S
1332	4822 242 70323	crystal 4.43 MHz
1337	4822 320 40096	delay line DL701

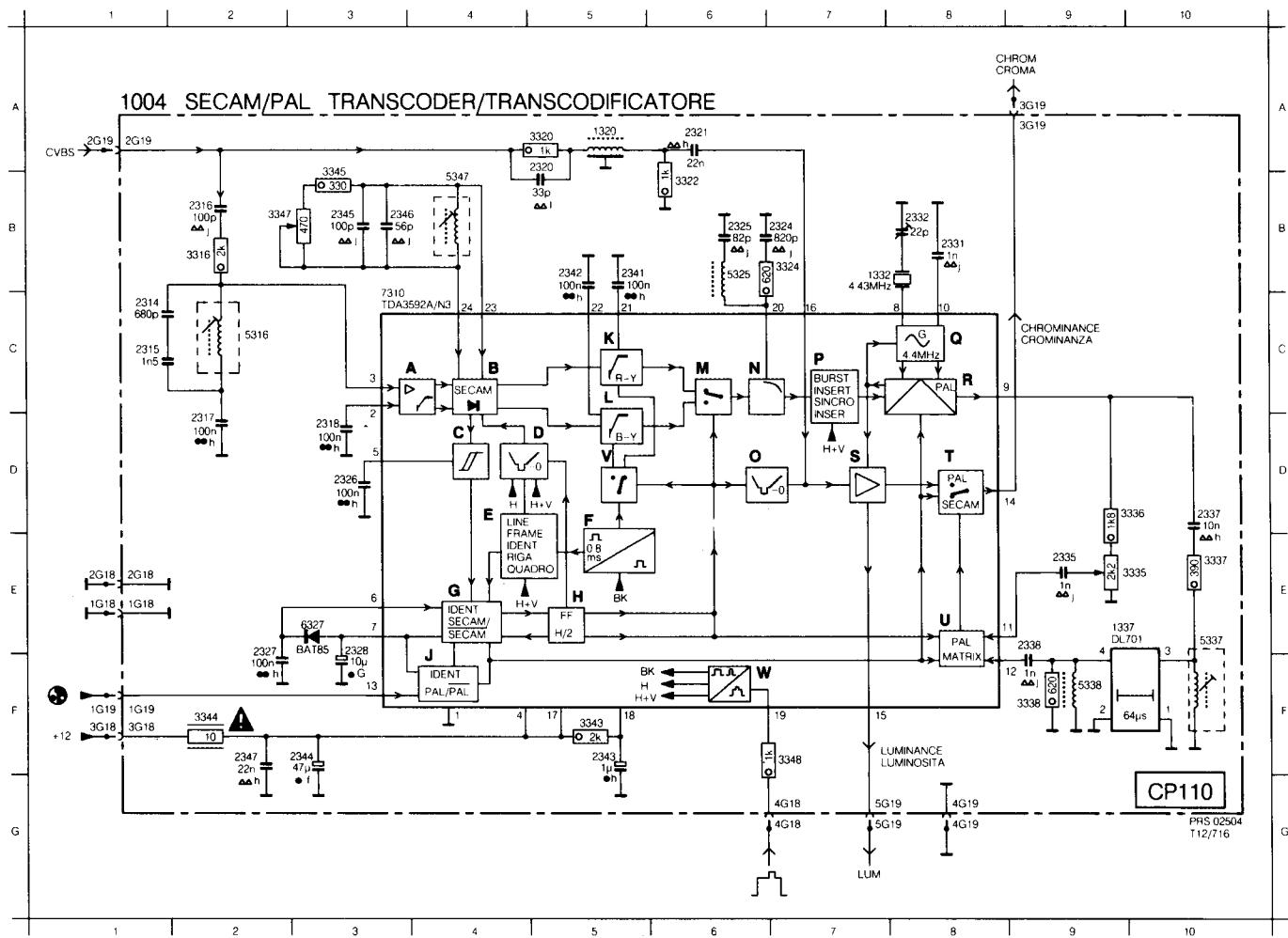


G18	4822 266 30276	4P
G19	4822 265 40503	5P

QUICK DIAGNOSIS CHART

Indication on programme display Indikation auf Programm Anzeige	Incorrect functioning Unrichtiges Funktionieren	Correct functioning Richtiges Funktionieren	Possible defective component Eventuelle schadhafte Komponente
<i>F0</i>			IC7770 C2763 (U1005) IC7840
<i>F1</i>			+12 supply +12 Speisung IC7840
<i>F2</i>			IC7840
<i>F3</i>			IC7840
<i>BB</i> O.K.	R.C. commands Fernbedienungsbefehle	Local keyboard commands Nahbedienungsbefehle	U1003 (IR-receiver)
<i>BB</i> O.K.			IC7865

1320	A 5	2315	C 1	2320	A 5	2326	D 3	2332	B 8	2341	B 5	2345	B 3	3320	A 5	3336	D 10	3344	F 2	5316	C 2	5347	B 4
1332	B 7	2316	B 2	2321	A 6	2327	E 2	2335	E 9	2342	B 5	2346	B 3	3322	B 6	3337	E 10	3345	B 3	5325	B 6	6327	E 10
1337	E 10	2317	D 2	2324	B 7	2328	E 3	2337	D 10	2343	F 5	2347	F 2	3324	B 7	3338	F 9	3347	B 2	5337	E 10	7310	C 3
2314	C 1	2318	D 3	2325	B 6	2331	B 8	2338	E 9	2344	F 3	3316	B 2	3335	E 10	3343	F 5	3348	F 7	5338	F 9	5348	F 10



ADJUSTMENTS SECAM/PAL TRANSCODER

1. "Circuit cloche"

Disconnect jumper 9302 at one side.

Apply a signal of a signal generator to capacitor 2316. Adjust the frequency of the signal generator for 4.286 MHz. Connect an oscilloscope to pin 3 of IC7310. Adjust 5316 for maximum amplitude.

2. Subcarrier oscillator

Apply a 75% SECAM colour bar pattern.
Connect 6-IC7310 by means of a 10k resistor to ground.
Connect a frequency counter with a high input impedance (via a probe $C \leq 2pF$) to pin 26-IC7260.
Adjust 2332 for a frequency of 8.867236 MHz.

3. SECAM DEMODULATOR

Apply a SECAM black frame signal.
Connect an oscilloscope to pin 14 of IC7310.
Adjust 3347 and 5347 for a minimum modulation.

4. Delay line

a. *Amplitude*

Apply a SECAM red frame signal. Connect an oscilloscope to pin 28 of IC7260.

Adjust 3335 for an equal amplitude of the lines.

b. *Phase*

Adjust for a normal brightness and contrast.

Connect an oscilloscope to pin 17.

Apply a 75% colour bar pattern.
Adjust the saturation control for an as flat as possible output voltage.

possible output voltage. Then apply a 75% SECAM colour bar pattern. Adjust 5337 so that the signal is virtually flat.

	Supply aerial signal (colour)		Normal sound		Line frame (Venetian blinds)
	Remove aerial signal		No or weak sound		Heavy horizontal bars
	Connect generator colour signal		No sound		Unstable TV picture
	Carry out voltage measurements		Sound distorted		Inject with frequency 2 half volume
	Carry out resistance (Ohmic) measurements		Connect black / white picture		... doesn't work
	Check ...		No or weak picture		Tune in ... Band
	Correct		Uniformly discoloured frame with no or weak picture		Colours
	Incorrect		Picture discoloured uniformly		One or two colours weak or not present
	Check circuit between ... and		Vertical amplitude too small or too large		Weak colours
	Set ...		Horizontal amplitude too small or too large		No colours
	Set ...		No vertical deflection		Switch the set on
	Remove unit		No vertical synchronisation		Correct television colour picture
	Insert unit		No horizontal synchronisation		TV-mode
	Connect the points A and B		Horizontal centring incorrect		Teletext-mode
	Remove connection between points A and B		Vertical centring incorrect		Teletext rows are missing or include incorrect characters
	Adjustment (general)		Vertical linearity incorrect		Statusrow is correct, other TXT-rows are missing
	Adjustment yields no result		The left and right vertical lines are curved		Statusrow is correct, other rows include errors
	Filament of picture tube glows		No horizontal deflection		Statusrow is not correct, other rows include errors
	Filament of picture tube does not glow		No synchronisation		Select other programm
	Too much light		Colour blurs in black / white picture		Unsynchronized TXT-picture
	Insufficient light		Strong colour noise in black / white picture		Teletext picture moves left / right
	No light		Correct sequence of colours		Teletext picture moves up / down

	Replace IC ...		No or weak horizontal bars
	Desolder ...		Vertical lines are curved no TV picture no synchronisation
	Resolder ...		Error indication on display
	Measure the signal / oscilloscope	OK	Programme display correct
	Measure frequency		No teletext
	Pulse / pulse train present	OK	Teletext correct
	Pulse / pulse train not present		Mixed teletext and TV picture
	Check lines ... for bus errors		
	Depress key ...		
	Is approximately equal to ...		
	Is equal to ...		
	Is not equal to ...		